Phason
electronic control/systems

BinBoss

Feed bin monitoring software

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Limited warranty

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Phason Inc. (Phason) warrants for a period of 90 days from the date of purchase that the software product will execute its programming instructions when properly installed on the personal computer or workstation indicated on this package. Phason does not warrant that the operation of the software will be uninterrupted or error free. Should this software product fail to execute its programming instructions during the warranty period, the purchaser's remedy shall be to return the software CD (media) to Phason for replacement. Should Phason be unable to replace the media within a reasonable amount of time, the purchaser's alternate remedy shall be a refund of the purchase price upon return of the product and all copies.

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Warranty service

Warranty service may be obtained from the Phason office location indicated in the user manual or service booklet.

Service and technical support

Phason will be happy to answer all technical questions that will help you use BinBoss.

Before contacting Phason, check the following:

- Read this manual for information about the window with which you are having trouble.
- If you still have a problem with BinBoss, collect the following information:

Any messages displayed by the BinBoss software

A description of the problem

A description of what you were doing before the problem occurred

Information about your feed bins

- Feed Level Sensor (FLS) serial number

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Chapter 1: Introducing BinBoss

This chapter introduces you to BinBoss and the layout of this manual. Read this chapter before reading the rest of the manual.

- Introducing BinBoss
- How BinBoss works
- Available equipment

Introducing BinBoss

All of us at Phason want to welcome you to BinBoss, a cost-effective solution for on-farm feed inventory management. BinBoss works with the Feed Level Sensors to measure the feed level in feed bins. The Feed Level Sensors use ultrasonic technology to accurately measure the feed levels.

BinBoss allows you to monitor feed levels in up to 32 feed bins from a central computer. No more climbing bins or estimating levels. Easy-to-read windows display feed bin levels, feed reorder warnings, and low feed level alarms. The combination of Feed Level Sensors and the BinBoss software is like having gauges on all your feed bins!

Monitoring the feed bins at your site using BinBoss and the Feed Level Sensors can help:

- Reduce feed inventory outages by more-accurately monitoring feed levels
- Make sure you receive the correct quantity of the correct feed in the correct bin at the correct time
- Make your site more efficient and more profitable

BinBoss features

- Automatic bin level monitoring
- Feed inventory display
- Adjustable reorder and low feed level alarms
- Reliable feed delivery detection from auger or pneumatic delivery systems
- Feed Delivery Reconciler—helps ensure the accuracy of measurements and feed deliveries
- Status viewers—view the status of a single bin or all bins at the same time
- Informative reports—review and print information for any previous period
- Automatic e-mailing and/or faxing of reports

Informative, useful reports

BinBoss has five reports and two status viewers to help you monitor your site.

- Bin Summary Report—a list of current feed heights and weights, headroom weights, and status for all feed bins. You can configure BinBoss to automatically e-mail or fax Bin Summary Reports.
- Feed Usage Report—a list of daily feed usage for each bin, sorted by date, and the total usage for the date range.

- Feed Delivery Report—a list of feed deliveries for each bin, sorted by date, and the total feed delivered for the date range.
- Alarm Settings Report—a list of the bin height, reorder level, and low feed level for each bin.
- Alarm History Report—a list of all alarms for the selected date range.
- Feed Bin Status Viewer—a graphic display of a feed bin, showing the current feed height and weight, alarm settings, and status.
- BinBoss Status Viewer—a graphic display of all feed bins, showing the current height and status.

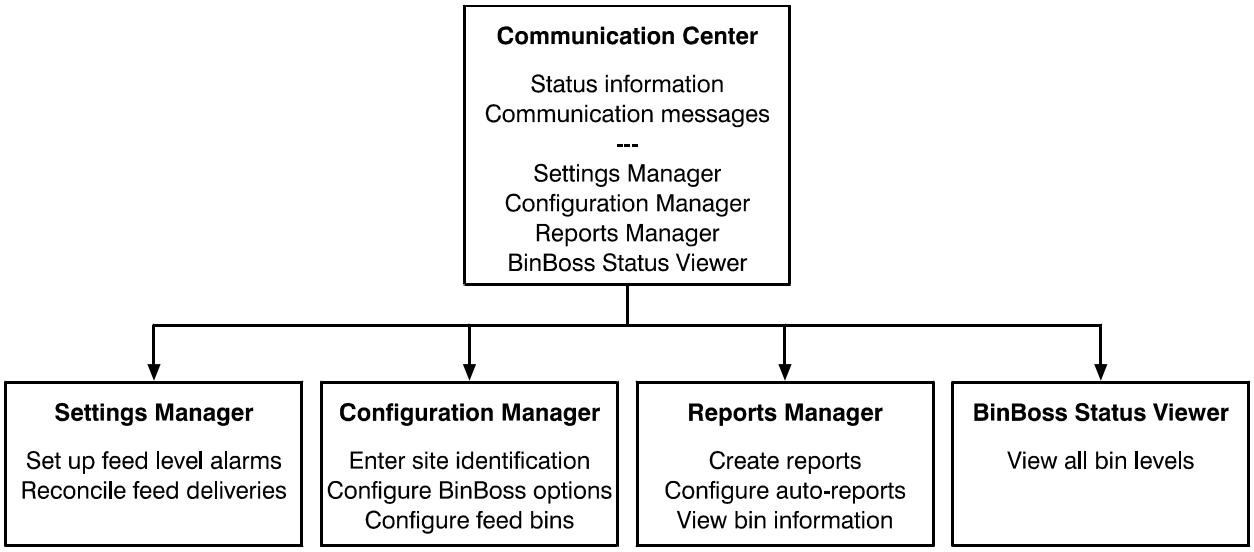
Feed Level Sensor features

- Low-maintenance design
- Easy installation in new or existing bins
- Auger or pneumatic delivery compatibility
- Reliable, accurate (±2% of full bin) ultrasonic technology
- -22 to 104°F (-30 to 40°C) operating range
- Rugged enclosure (corrosion resistant, water resistant, and fire retardant)
- Two-year limited warranty

BinBoss windows

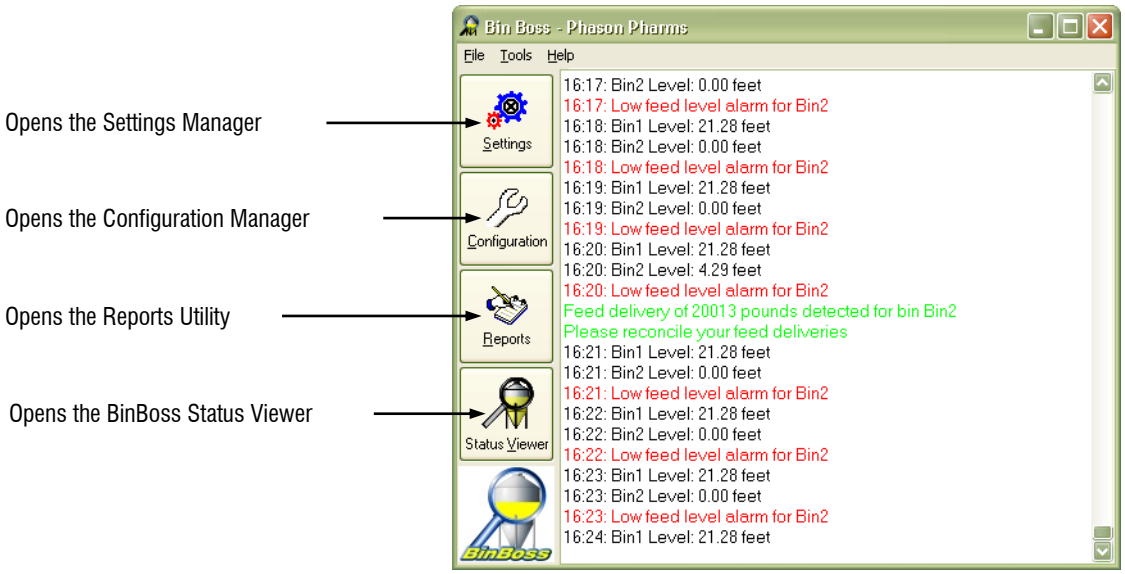
BinBoss has several windows you should be familiar with before working with the program. The main windows are:

- Communication Center
- Settings Manager
- Configuration Manager
- Reports Manager
- BinBoss Status Viewer



Communication Center

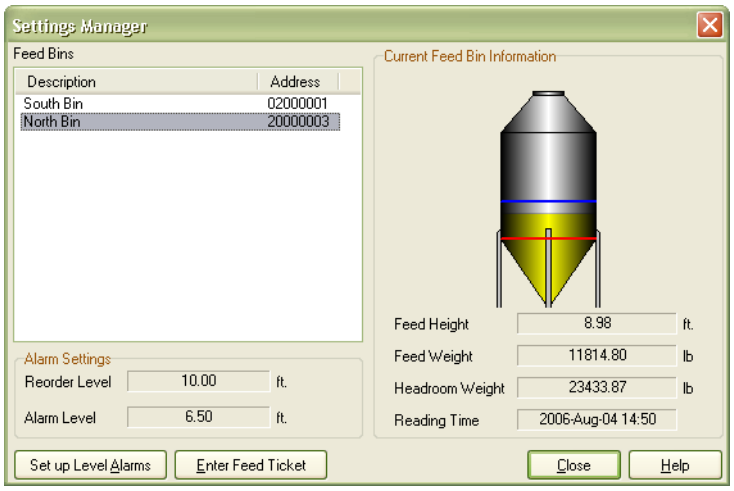
The Communication Center is the main window for BinBoss. The Communication Center displays all the communication messages from the BinBoss software and the Feed Level Sensors.


Opens the Settings Manager
Opens the Configuration Manager
Opens the Reports Utility
Opens the BinBoss Status Viewer
Bin Boss - Phason Pharms
File Tools Help
Settings
Configuration
Reports
Status Viewer
BinBoss
16:17: Bin2 Level: 0.00 feet
16:17: Low feed level alarm for Bin2
16:18: Bin1 Level: 21.28 feet
16:18: Bin2 Level: 0.00 feet
16:18: Low feed level alarm for Bin2
16:19: Bin1 Level: 21.28 feet
16:19: Bin2 Level: 0.00 feet
16:19: Low feed level alarm for Bin2
16:20: Bin1 Level: 21.28 feet
16:20: Bin2 Level: 4.29 feet
16:20: Low feed level alarm for Bin2
Feed delivery of 20013 pounds detected for bin Bin2
Please reconcile your feed deliveries
16:21: Bin1 Level: 21.28 feet
16:21: Bin2 Level: 0.00 feet
16:21: Low feed level alarm for Bin2
16:22: Bin1 Level: 21.28 feet
16:22: Bin2 Level: 0.00 feet
16:22: Low feed level alarm for Bin2
16:23: Bin1 Level: 21.28 feet
16:23: Bin2 Level: 0.00 feet
16:23: Low feed level alarm for Bin2
16:24: Bin1 Level: 21.28 feet

Settings Manager

From the Settings Manager, you can:

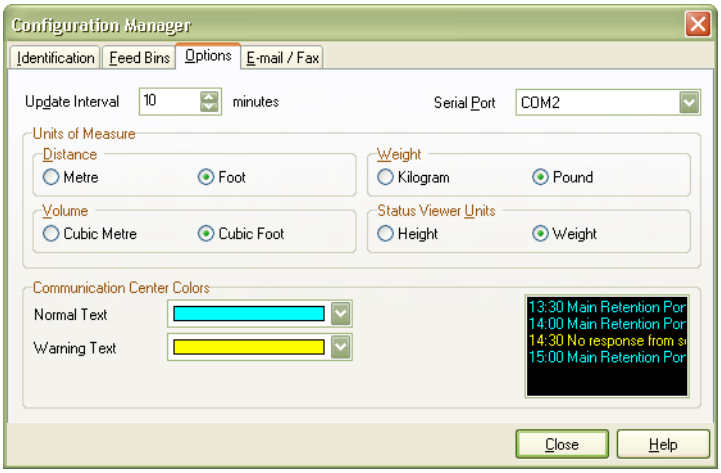
- Set up feed level alarms (on page 29)
- Reconcile feed deliveries (on page 36)



Configuration Manager

From the Configuration Manager, you can:

- Enter site identification (on page 21)
- Configure feed bins (on page 24)
- Configure BinBoss options (on page 22)
- Configure the BinBoss e-mail and fax clients (on page 28)



Reports Manager

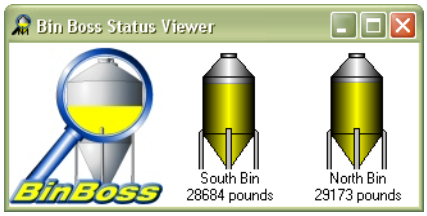
From the Reports Manager, you can:

- Use the Feed Bin Status Viewer (on page 35)
- Create Reports (on page 43)
- Configure report e-mails and faxes (on page 44)

BinBoss Status Viewer

The BinBoss Status Viewer starts automatically when you start BinBoss. The viewer displays levels and alarms for all feed bins at your site.

For more information, see **Using the BinBoss Status Viewer** on page 34.



Computer requirements

Customers who need to purchase a new computer to run BinBoss must purchase one that meets certain requirements. For the latest computer and system requirements, contact Phason Customer Support at 204-233-1400 or **support@phason.ca**.

How BinBoss works

The Feed Level Sensor uses an ultrasonic transducer to sense (measure) the feed level in a bin. The sensor emits ultrasonic pulses that are reflected by the feed. The reflected pulse is called an echo. The sensor measures the time the pulses take to reflect back to the sensor and then sends the data to the BinBoss software. BinBoss analyzes the data and converts it to reliable measurements of the feed level, which it can display in height, volume, or weight.

BinBoss determines the amount of feed disappearing over time (usage) by measuring the feed levels at different times of the day and then calculating the difference. BinBoss calculates the daily feed usage at midnight each day.

When a feed delivery occurs in an auger delivery system, the sensor detects the bin lid opening (tilting). If the sensor detects an increase in the feed level after the lid has been closed, then BinBoss recognizes this as a "fill event."

If you have a feed delivery system that does not require the bin lid to be tilted, the sensors cannot automatically detect deliveries. In these cases, you must install an external fill detection switch. For pneumatic delivery systems, a Pneumatic Fill Switch is available. For more information, see **Pneumatic Fill Switch** on page 14.

Accuracy

BinBoss and the Feed Level Sensor have been designed to measure the feed level within two percent of the full bin amount.

For example, if you have a 12-ton feed bin (24,000 pounds), the Feed Level Sensor should be able to measure the amount of feed in the bin within 480 pounds (.02 × 24,000 = 480).

Let's take the above example one step further. If you had an *actual* daily feed usage of 3,000 pounds, BinBoss should report the usage for that day as an amount in the range of 2,520 to 3,480 pounds. These are standard commercial tolerances for process control devices.

The specific gravity of the feed also affects the accuracy of the Feed Level Sensor. The specific gravity of the feed can change from one feed type to another and from one batch to another. The way to correct this is using the Feed Delivery Reconciler.

The Feed Delivery Reconciler corrects differences between the amount of feed measured and the amount of feed delivered. The difference between the measured amount and the delivered amount (feed ticket) creates a correction factor. BinBoss uses this correction when it calculates feed usage and daily usage.

Also, if your feed delivery system does not allow the bin lid to be tilted and an external fill detection switch is not an option, you will need to manually enter all feed deliveries. For more information, see **Reconciling feed deliveries** on page 36.

Available equipment

Phason has some equipment that can enhance the performance of your feed level monitoring system.

Pneumatic Fill Switch

The Pneumatic Fill Switch (PFS) works with the Feed Level Sensor (FLS) to detect feed bin fills in a pneumatic feed delivery system.

BinBoss needs to know when a feed bin has been filled. In feed delivery systems where feed is delivered through the bin lid using an auger, the Feed Level Sensor detects the bin lid opening. In pneumatic feed delivery systems, the feed is blown into the bin without opening the bin lid. Because the lid is not opened while the bin is being filled, the FLS cannot detect the fill event.

The PFS senses the pressure change when the feed tube is pressurized and sends a signal to the FLS to let it know the bin is being filled. All feed bins that are being monitored by a Feed Level Sensor and are using pneumatic feed delivery must have a Pneumatic Fill Switch.

Features

- Easy installation in most bin configurations
- Weather-resistant enclosure and materials
- All mounting hardware included

Ratings

- Electrical: 40 mA
- Minimum pressure during fills: 0.25 psi
- Maximum pressure during fills: 10 psi
- Operating range: –40 to 150°F (–40 to 66°C)

Chapter 2: Installing and configuring BinBoss

This chapter explains how to install and configure BinBoss. Configuration includes items you set up seldom or only once at the beginning.

- Measuring feed bins
- Installing BinBoss
- Configuring BinBoss

There are several main steps to the installation and configuration process. It is best to complete them in the following order.

1. Install the Feed Level Sensors, Regulated Power Supply, and any other additional hardware. For more information, see the installation guide for each product.
2. Measure the feed bins. For more information, see **Measuring feed bins** below.
3. Connect the communication cable to all Feed Level Sensors and the computer. For more information, see the RS485-FD Converter and FLS installation guides.
4. Install and register the BinBoss software. For more information, see **Installing BinBoss** on page 20
5. Configure BinBoss options and your feed bins. For more information, see **Configuring BinBoss** on page 21.

Measuring feed bins

Before adding and configuring feed bins in BinBoss, you need to know the dimensions of your bins. Because Feed Level Sensors measure the amount of feed remaining your feed bins, you need to tell BinBoss the dimensions of the bins.

There are six dimensions you need to measure for each bin:

- Sensor offset
- Top cone diameter
- Top cone height
- Cylinder height
- Cylinder diameter
- Bottom cone height

To measure feed bins

- Collect the following items:

A 25-foot (7.6 metre) or longer measuring tape

A 48-inch (1.2 metre) or longer level

A plumb line

- Refer to the **Bin dimension diagrams** on page 17.
- Enter your measurements in the **Bin dimensions worksheet** on page 52.

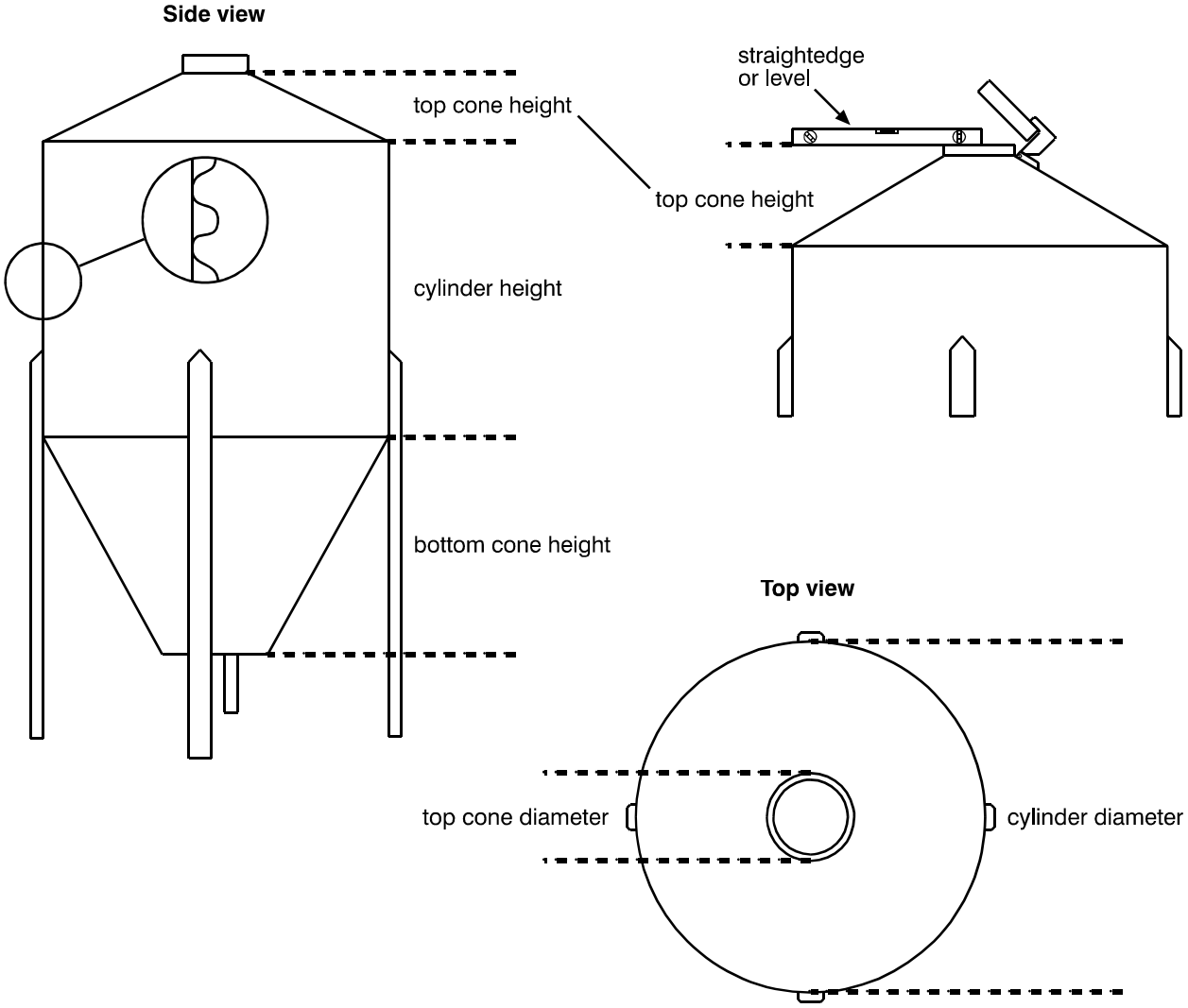
NOTE

When measuring feed bins, measure them as accurately as possible. Inaccurate measurements cause inaccurate feed calculations.

Make sure you measure and enter the dimensions in the same unit of measure that you have selected for BinBoss.

Bin dimension diagrams

Use the following diagrams to help you understand how to measure the bin dimensions.



Sensor offset

If the sensor is mounted flush against the bin lid, enter the measurement as "0".

1. If the sensor is not mounted flush (flat) against the bin lid, measure how far below the lid it is mounted. When you enter the distance, enter it as a positive value.
2. Enter the measurement in the worksheet.

Cylinder diameter

The cylinder diameter is the distance across the center of the bin. Follow one of the two methods below to measure the cylinder diameter.

If the feed bin you are measuring has corrugated walls, place a straightedge along the outer edge of the bin, and then measure the distance to the inner edge. Subtract this distance from the cylinder diameter. For more information, see the diagram on page 17.

Method one (two support legs directly opposite each other)

1. Locate two support legs that are directly opposite to each other.
2. Measure the inside distance between these two legs.
3. Enter the cylinder diameter in the worksheet.

Method two (support legs are not directly opposite each other)

A long straightedge or plumb line is helpful for measuring the cylinder diameter in this method.

1. Align the straight edge with outside of the cylinder portion of the bin and place a mark on the bin pad. Repeat this on the opposite side.
2. Measure the distance between the two marks.
3. Enter the cylinder diameter in the worksheet.

Bottom cone height

The bottom cone height is the distance from the top of the cone (where the cone joins the cylinder) to the bottom of the cone (top of the auger boot).

A long straightedge or plumb line is helpful for measuring the bottom cone height.

1. Measure the distance from the top of the cone to the bottom of the cone.
2. Enter the bottom cone height in the worksheet.

Cylinder height

The cylinder height is the distance from the top of the cylinder to the bottom of the cylinder.

1. Measure the distance from the top of the cylinder to the bottom of the cylinder.
2. Enter the cylinder height in the worksheet.

Top cone diameter

The top cone diameter is the distance across the center of the lid.

1. Measure the distance across the center of the lid opening.
2. Enter the top cone diameter in the worksheet.

Top cone height

The top cone height is the distance from the top of the cone (the bin opening) to the bottom of the cone (where the cone joins the cylinder).

A long straightedge or level and a plumb line are helpful for measuring the top cone height.

1. Measure the distance from the top of the cone (the bin opening) to the bottom of the cone.
2. Enter the top cone height in the worksheet.

Installing BinBoss

BinBoss has an installation wizard that guides you through the installation.

To install BinBoss

1. Insert the BinBoss CD into your computer's CD-ROM drive.
   The Installation Wizard should start automatically. If it does not start, find and start the file `Install_BinBoss.EXE` on the CD-ROM.
2. Follow the instructions on the screen.
3. When the installation is complete, remove the CD from the CD-ROM drive.

Registering BinBoss

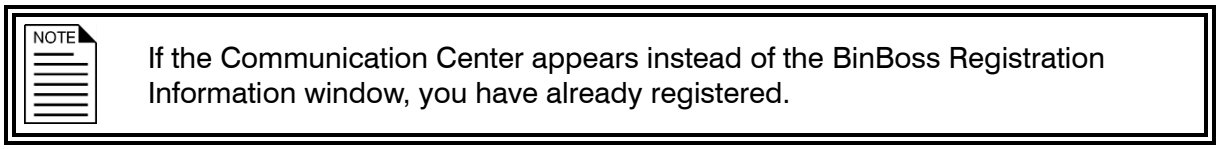
You need to register BinBoss if:

- You are starting BinBoss for the first time
- You had computer problems and reinstalled BinBoss

To register BinBoss, you need a product key. To get a product key, you must fax, mail, or e-mail your registration form to Phason Customer Support. If you prefer to phone Phason for a product key, you must have the information from your registration form.

To register BinBoss

1. Start BinBoss
   The BinBoss Registration Information window appears.


NOTE
If the Communication Center appears instead of the BinBoss Registration Information window, you have already registered.

2. Type all the required information (customer information and serial number) in the correct fields and then click **Submit**.
   The BinBoss License Agreement appears.
3. Read the agreement and then click **I Agree** to continue. If you click **I Decline**, you cancel the installation.
   The BinBoss Registration window appears.
4. Send the registration form to Phason by mail, fax, or e-mail.

To print the registration form, click **Print**.

- To e-mail the registration form, click **E-mail**. You must have a valid, working e-mail account on your computer to do this.

5. Beside Product Key, type the product key supplied to you by Phason.
6. Click **OK** to complete the registration.

Configuring BinBoss

Configuring BinBoss includes the following:

- Configuring site identification below
- Configuring BinBoss options on page 22
- Adding, editing, and removing feed bins on page 24
- Setting up alarms on page 29

Configuring site identification

To personalize your BinBoss software, you can enter your farm name and location.

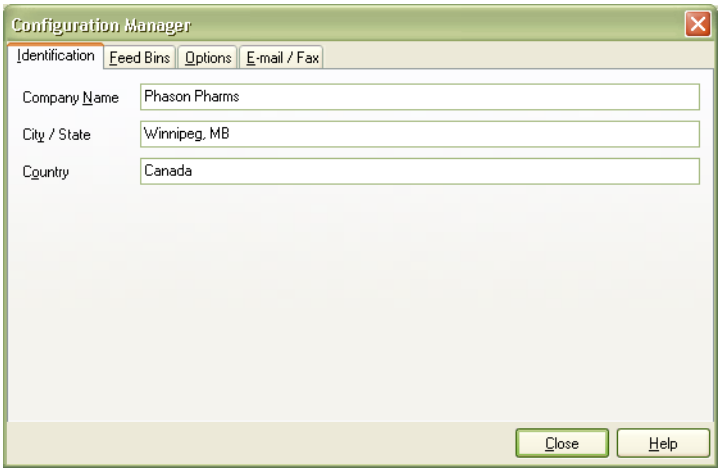
Farm name

The farm or company name is how you identify your site or system. The farm name appears on the Communication Center and at the top of all reports.

Location

The location information should already be automatically entered from your registration information. If not, you can enter or change the location.

The Configuration Manager is where you configure site identification.



To configure site identification

1. Open the Configuration Manager.
2. Beside Company Name, enter the name of your site or company.
3. If either of the location items have not been entered automatically or are incorrect, enter your site location.
4. Click **Close** to return to the Communication Center.

Configuring BinBoss options

BinBoss has four options you need to configure:

- Update interval
- Serial port
- Units of measure
- Communication Center colors

Update interval

The update interval, in minutes, determines how often BinBoss requests feed level information from the Feed Level Sensors. At each update interval, BinBoss updates the Communication Center and the Status Viewer.
Default: 10 minutes; *Range:* 1 to 60 minutes

Serial port

Serial ports are "communication channels" your computer uses to "talk" with some types of external devices. Computers can have several serial ports, named COM1, COM2, and so on. Select the port that has your RS485-FD Converter connected to it.

If you are unsure which port your RS485-FD Converter is connected to, start at COM1 and then return to the Communication Center.

- If you selected the **correct** port, after the update interval passes, you will see messages similar to the ones below.

  Serial port COM1 opened successfully
  NFin-Bin1 Level: 6.57 feet

- If you selected the **wrong** port, after the update interval passes, you will see messages similar to the ones below.

  Serial port COM1 opened successfully
  Communications error for 12345678. No response received within timeout.
  Communications error for 12345678. No response received within timeout.
  Communications error for 12345678. No response received within timeout.
  Communications error for 12345678. Maximum attempts exceeded.

Setting the update interval to one minute while determining the correct port is a good idea. After you have selected the correct port, set the update interval to your desired duration.

Units of measure

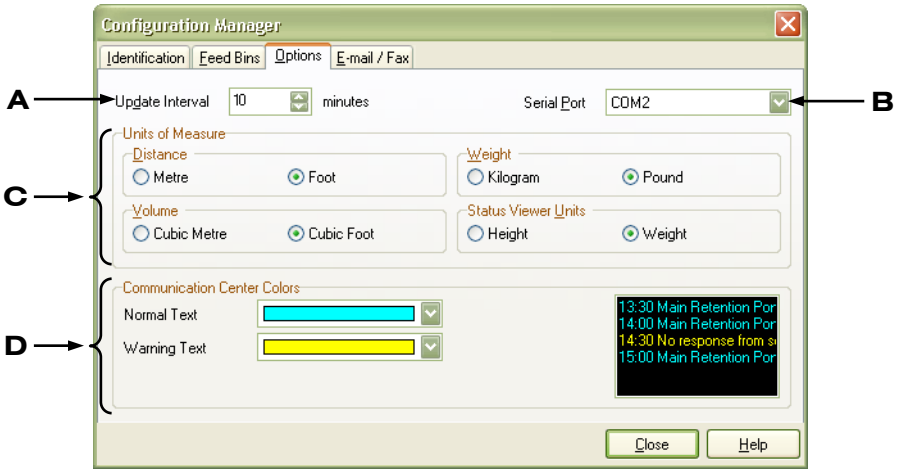
The units of measure affect how BinBoss measures, calculates, and displays feed level data. There are three units of measure: distance (for example, bin dimensions), weight (calculated feed weight), and volume (calculated bin and feed volumes).

Communication Center colors

BinBoss allows you to choose the display colors of the Communication Center. You can choose the normal text and warning text colors. Choose colors that are easily visible.

- When you change the colors, the change takes effect the next time a message is posted to the Communication Center.
- Fill events are green.
- When you start BinBoss, all previous messages are the normal text color.

The Configuration Manager is where you configure the options.



A This is the update interval. At each update interval, BinBoss updates the Communication Center and the Status Viewer. You can adjust the interval by clicking the **Up** or **Down** arrows.

B This is where you select the serial port. You must select the correct serial port so that BinBoss can communicate with the Feed Level Sensors.

C These are the units of measure BinBoss is currently using. You can select different units, but make sure you measure and enter the bin dimensions in the same unit of measure you have selected.

D These are the colors BinBoss uses for normal and warning text in the Communication Center.

To configure BinBoss options

1. Open the Configuration Manager and then select the **Options** tab.
2. Beside Update Interval, enter how often you want BinBoss to update feed level information, or click the **Up** or **Down** to adjust the value.
3. Beside Serial Port, select the port that has the RS485-FD Converter connected to it. For more information, see **Serial port** on page 22.
4. Under Distance, select the unit of measure you want to use. Repeat this step for Weight and Volume.
5. Beside Normal Text, select the color you want to use. Repeat this step for Warning Text.
6. Click **Close** to return to the Communication Center.

Adding, editing, and removing feed bins

To add feed bins, you must have the dimensions of all your feed bins. In addition, you must know the address of the Feed Level Sensor that is mounted on the bin. If you have not measured the bins, see **Measuring feed bins** on page 16

Description

The feed bin description is how you will identify the bin in the software and reports. A good description is much easier to remember than an eight-digit address (see below).

Feed Level Sensor Address

Feed Level Sensors are identified in BinBoss using an address. An address is a unique eight-digit code the software uses to locate and identify the Feed Level Sensor. The Feed Level Sensor is programmed with an address before it leaves the factory. To locate the address for a Feed Level Sensor, see your **Feed Level Sensor installation guide**.

Feed density

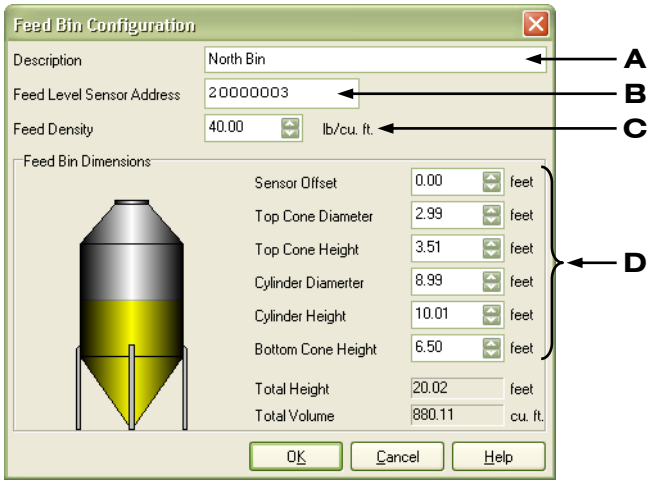
Feed density is the measure of how much the feed weighs for a specific volume. BinBoss uses feed density when calculating feed weights.

If you know the density of the feed you are using, you can adjust the value. If you do not know the feed density, or are unsure, leave the it at the default value.
Default: 40 pounds per cubic foot, 640.75 kilograms per cubic metre.

Bin dimensions

BinBoss needs to know the size of each feed bin so that it can calculate and display feed levels. For specific information about bin dimensions, see **Measuring feed bins** on page 16.

The Feed Bin Configuration window is where you enter the dimensions for a feed bin.



A This is where you enter the description, or name, of the feed bin.

B This is where you enter the address of the Feed Level Sensor mounted on the feed bin. The address must be exactly the same as the one on the sensor.

C This is the density (weight per volume unit) BinBoss uses to calculate the weight of the feed in the bin. You can change the feed density value by clicking the **Up** or **Down** arrows.

D These are the bin configuration and dimensions. You can change the dimensions by clicking the **Up** or **Down** arrows. As you change the bin dimensions, the bin image, total height, and total volume change.

Use the **Bin dimensions worksheet** on page 52 when entering bin dimensions.

As you add or remove feed bins, they automatically appear or disappear from the BinBoss Status Viewer. For more information, see Using the BinBoss Status Viewer on page 34.

To add feed bins

1. Open the Configuration Manager and then select the **Feed Bins** tab.
2. Click **Add**.
   The Feed Bin Configuration window appears.
3. Beside Description, enter a descriptive name for the feed bin.
4. Beside Feed Level Sensor Address, enter the address of the Feed Level Sensor mounted on the bin.
5. Beside each bin dimension, enter the measurements for the bin or click the **Up** or **Down** arrows to adjust the value. **Make sure each dimension is correct. Incorrect dimensions cause inaccurate feed level measurements.**
6. Click **OK** to save the configuration and return to the Configuration Manager.
7. Click **Close** to return to the Communication Center.

To edit feed bins

1. Open the Configuration Manager and then select the **Feed Bins** tab.
2. Select the feed bin you want to edit and then click **Edit**.
   The Feed Bin Configuration window appears.
3. Make any required changes.
4. **Make sure all bin dimensions are correct. Incorrect dimensions cause inaccurate feed level measurements.**
5. Click **OK** to save the configuration and return to the Configuration Manager.
6. Click **Close** to return to the Communication Center.

To remove feed bins

1. Open the Configuration Manager and then select the **Feed Bins** tab.
2. Select the feed bin you want to remove and then click **Remove**.
   A confirmation window appears.
3. To remove the bin and all its data, click **Yes**. To cancel and return to the Configuration Manager, click **No**.
4. Click **Close** to return to the Communication Center.

Configuring the BinBoss e-mail and fax clients

BinBoss has built-in e-mail and fax clients that can automatically e-mail and/or fax reports. You must configure the clients before BinBoss can send automatic reports. For information, see **Scheduling automatic reports** on page 44.

NOTE

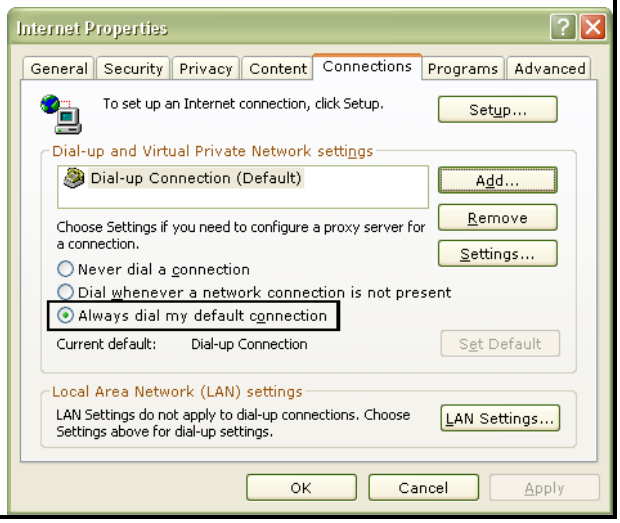
To configure the BinBoss e-mail client, you must have a valid e-mail account. You will need the e-mail address, server information, account name, and password for the account. If you already have an e-mail client (such as Microsoft® Outlook®) configured on your computer, you can copy the configuration from it.

If your computer uses a modem to connect to the Internet (in other words, has a dial-up account), it must be configured to automatically dial when BinBoss sends reports.

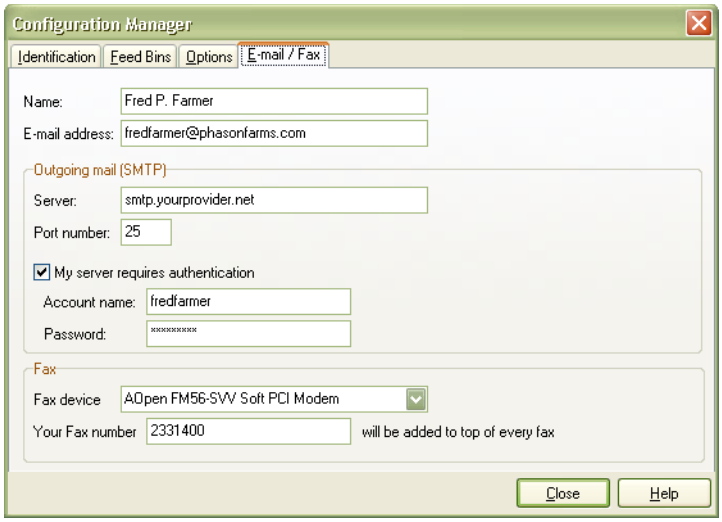
In the Windows™ Control Panel, double-click Internet Options.

Select the **Connections** tab and then make sure *Always dial my default connection* is selected.

To configure the BinBoss fax client, you must have a fax modem installed on your computer.



The Configuration Manager is where you configure the BinBoss e-mail and fax clients.



To configure the BinBoss e-mail client

1. Open the Configuration Manager and then select the **E-mail/Fax** tab.
2. To configure the e-mail client, enter your e-mail account and server information.
3. To configure the fax client, select your fax device (fax modem) and enter your fax number.
4. Click **Close** to return to the Communication Center.

If BinBoss displays an error message while sending an e-mail or fax, look up the message in the **Troubleshooting** table on page 49.

Do not pick up the phone while BinBoss is sending a fax.

Setting up alarms

BinBoss has three alarms/warnings: bin lid open alarm, feed reorder level warning, and low feed level warning

Bin lid open alarm

When a bin lid is open, the Communication Center displays (in "normal text" color) the following message: *<bin description> lid open*. In addition, the BinBoss Status Viewer shows the lids open.

When a bin lid has been open for four or more consecutive hours, the Communication Center displays (in "warning text" color) the following message: *<bin description> lid open for # days # hours # minutes # seconds*. In addition, the BinBoss records the information in the alarm log.

Feed reorder level warning

The feed reorder level is the level in feet or metres from the bottom of the bin that provides enough time for the vendor to deliver more feed before the bin will be empty. You can have different reorder levels for each bin.

When the feed drops below the reorder level, the following happens:

- The Communication Center displays (in "warning text" color) the following message: *Feed reorder warning for <bin description>*.
- The BinBoss Status Viewer changes the bin color to blue.
- The Feed Bin Status Viewer displays a reorder level warning.
- BinBoss records the information in the alarm log.

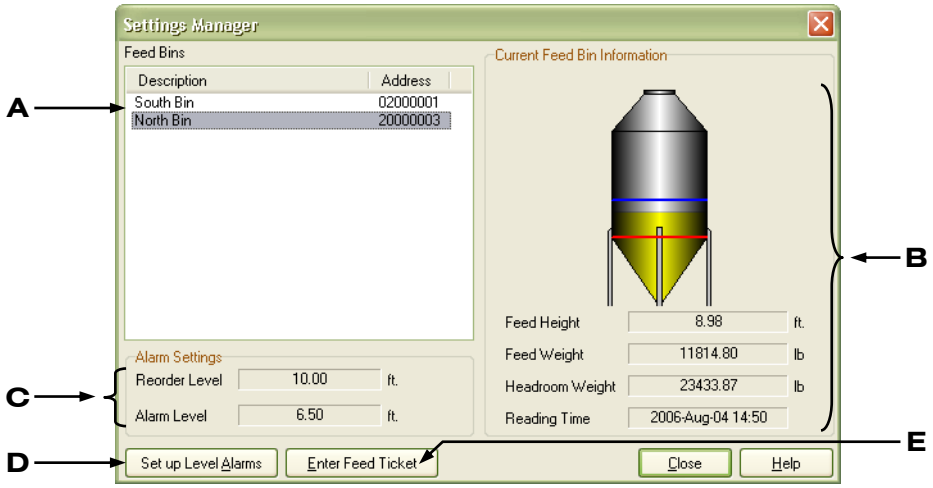
Low feed level alarm

The low feed level is the feed level at which there is a danger of running out of feed and you need to fill the bin immediately. You can have different low feed alarm levels for each bin.

When the feed drops below the low feed level, the following happens:

- The Communication Center displays (in "warning text" color) the following message: *Low feed level alarm for <bin description>*.
- The BinBoss Status Viewer changes the bin color to red.
- The Feed Bin Status Viewer displays an alarm level warning.
- BinBoss records the information in the alarm log.

The Settings Manager is where you set up alarms



A This is a list of feed bins at your site.

B This is the latest feed level information for the selected bin. For descriptions, see below.

C These are the reorder and low feed alarm levels. If the alarms are not enabled, the boxes are blank.

D This button opens the Alarm Settings window, which is where you set up the level alarms.

E This button opens the Feed Delivery Reconciler, which is where you enter feed tickets. For more information, see **Reconciling feed deliveries** on page 36.

Feed height

Feed height is the distance from the bottom of the bin to the top of the feed.

Feed volume

Feed volume is the volume of the feed in the bin. BinBoss calculates the volume using the feed height and the bin dimensions.

Feed weight

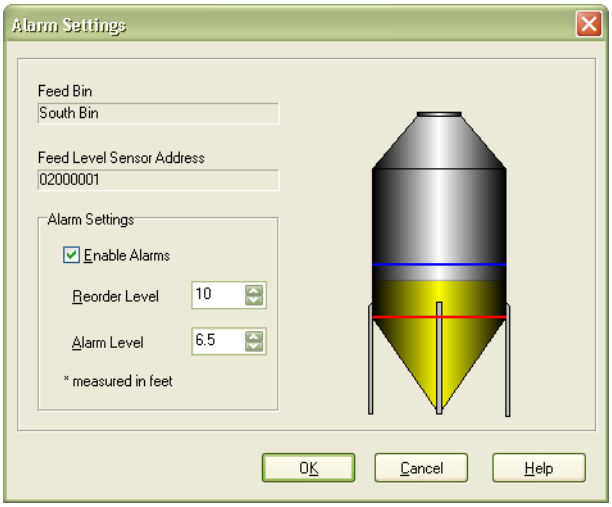
Feed weight is the weight of the feed in the bin. BinBoss calculates the weight using the feed height, bin dimensions, and feed density.

Headroom weight

Headroom is the amount of feed, in pounds or kilograms, that can be delivered into the empty space of the feed bin.

To set up alarms

1. Open the Settings Manager.
2. Under Feed Bins, select a bin.
   The Settings Manager loads the information for selected bin.
3. Click **Set up Level Alarms**.
   The Alarm Settings window appears.



   If the alarms are not enabled, the levels are grayed out and the bin image is not visible.
4. If the alarms are not enabled, select Enable Alarms.
5. Beside Reorder Level, enter the height or click **Up** or **Down** to adjust the value.
6. Beside Alarm Level, enter the height or click **Up** or **Down** to adjust the value.
7. Click **OK** to save the settings and return to the Settings Manager.
8. Click **Close** to return to the Communication Center.

To enable or disable alarms

1. Open the Settings Manager.
2. Under Feed Bins, select a bin.
   The Settings Manager loads the information for selected bin.
3. Click **Set up Level Alarms**.
   The Alarm Settings window appears.
4. To enable the alarms for the bin, select Enable Alarms. To disable the alarms, deselect and remove the check mark.
5. Click **OK** to save the settings and return to the Settings Manager.
6. Click **Close** to return to the Communication Center.

Chapter 3: Monitoring feed bins

This chapter explains how to effectively monitor feed bins and create reports.

- Monitoring feed levels
- Reconciling feed deliveries
- BinBoss reports
- Interpreting data

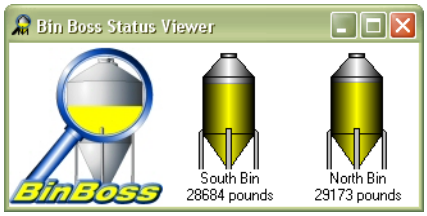
Monitoring feed levels

There are several things you can do regularly to monitor your feed system and help ensure you get the most-accurate information from it.

- Check the Communication Center on a regular basis to make sure there are no communication problems or alarms.
- Check the BinBoss Status Viewer and Feed Bin Status Viewer often to make sure there is enough feed in each bin and that there are no alarms.
- Reconcile your feed deliveries (in other words, enter the feed tickets) after each fill event/feed delivery.
- Review the Bin Summary and Alarm History reports daily to verify levels and see if there are or have been any alarms.

Using the BinBoss Status Viewer

The BinBoss Status Viewer displays alarm and feed level information for all the bins at your site. The BinBoss Status Viewer starts automatically when you start BinBoss. If the viewer is not visible, click the **Status Viewer** button on the Communication Center, or check the taskbar at the bottom of the screen.



- As you add or remove feed bins, they automatically appear or disappear from the viewer. The shape and size of the bins depend on the bin configuration.
- The feed levels are shown in yellow on the bins and in text below the bins.
- If the feed is below the reorder level and above the low feed level, the empty part of the bin is blue.
- If the feed is below the low feed level, the empty part of the bin is red.

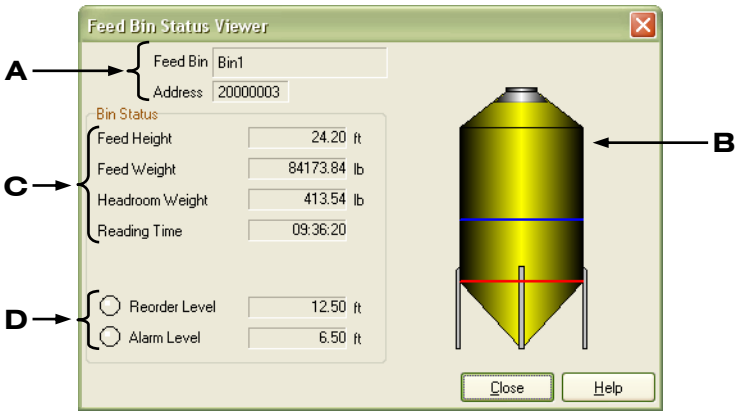
NOTE

If you see the message “Communication Lost”, BinBoss cannot communicate with the Feed Level Sensor or it is not working properly. For more information, see **Appendix A: Troubleshooting** on page 49

Double-clicking a bin in the BinBoss Status Viewer opens the Feed Bin Status Viewer for that bin.

Using the Feed Bin Status Viewer

The Feed Bin Status Viewer is a more-detailed version of the BinBoss Status viewer that displays information about the feed level in a single bin.



A This is the feed bin you are viewing.

B This is an image of the feed bin. The yellow area is the feed level, the blue line is the reorder level, and the red line is the low feed level.

C This is detailed information about the amount of feed in the bin. See the descriptions starting below.

D These are the alarm indicators. The Reorder indicator changes to blue when the feed level is below the reorder level. The Alarm indicator changes to red when the feed level is below the alarm level. For more information about alarm settings, see **Setting up alarms** on page 29.

Feed height

Feed height is the distance from the bottom of the bin to the top of the feed.

Feed volume

Feed volume is the volume of the feed in the bin. BinBoss calculates the volume using the feed height and the bin dimensions.

Feed weight

Feed weight is the weight of the feed in the bin. Bin boss calculates the weight using the feed height, bin dimensions, and feed density.

Headroom weight

Headroom is the amount of feed, in pounds or kilograms, that can be delivered into the empty space of the feed bin.

To open the Feed Bin Status Viewer

1. Open the Reports Manager.
2. Beside Feed Bin, select the bin you want to view.
3. Click **View Bin Status**.
   The Feed Bin Status Viewer appears.
4. Click **Close** to return to the Reports Manager.
5. Click **Close** to return to the Communication Center.

You can also open the Feed Bin Status Viewer by double-clicking a bin in the BinBoss Status Viewer.

Reconciling feed deliveries

Reconciling feed deliveries allows you to correct differences between the amount of feed measured by the Feed Level Sensors and the amount of feed delivered according to the feed delivery ticket. Reconciling your feed inventory on a regular basis helps ensure the accuracy of all your feed level information.

If you have a feed delivery system that does not require the bin lid to be tilted, the sensors cannot automatically detect deliveries. In these cases, you must install an external fill detection switch. For pneumatic delivery systems, a Pneumatic Fill Switch is available. For more information, see **Pneumatic Fill Switch** on page 14.

The Feed Delivery Reconciler allows you to add, edit, and remove deliveries.

- **When to edit deliveries**—normally, BinBoss automatically detects feed deliveries and displays messages in the Communication Center window, similar to the one below.

  Feed delivery of 11182 pounds detected for bin <bin description>
  Reconcile your feed deliveries

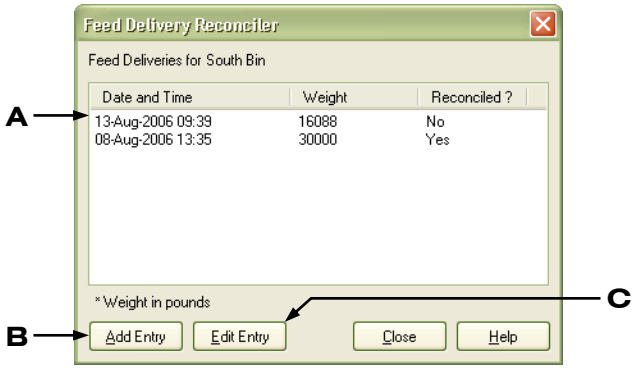
  When you see the message, you need to edit the delivery.

- **When to add deliveries**—if your feed delivery system does not automatically detect deliveries and an external fill detection switch cannot be installed, you must add deliveries manually.

  Add deliveries as soon as possible after they occur.

> NOTE
>
> If BinBoss does not automatically detect deliveries and you do not add them manually, BinBoss can display irregular feed consumption in reports.
>
> Enter the delivery date as the ***actual date the delivery occurred***.

- **When to remove deliveries**—when there is a duplicate delivery or BinBoss detects a delivery that did not actually occur, you will need to remove the delivery.



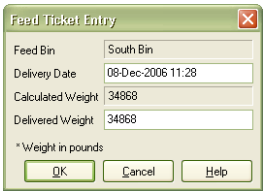
A This is a list of fill events (deliveries) for the selected bin. The list is sorted from most recent to oldest.

B This button opens the Feed Ticket Entry window, which is where you enter feed tickets. Normally BinBoss detects deliveries automatically. If BinBoss has not detected a delivery, click this button to add a delivery that is not listed.

C This button opens the Feed Ticket Entry window, which is where you enter feed tickets. Select a delivery and then click this button to edit or remove the delivery.

To edit (reconcile) feed deliveries

1. Open the Settings Manager.
2. Under Feed Bins, select a bin.
   The Settings Manager loads the information for selected bin.
3. Click **Enter Feed Ticket**.
   The Feed Delivery Reconciler appears.
4. Under Feed Deliveries, select the delivery you want to reconcile.
5. Click **Edit Entry**.
   The Feed Ticket Entry window appears.



6. Edit the delivery details

To edit the delivery time, enter a new date and time. You must enter it in the same format.
To edit the weight, enter the weight from the delivery ticket.

7. Click **OK** to save the changes and return to the Feed Delivery Reconciler.
8. Click **Close** to return to the Settings Manager.
9. Click **Close** to return to the Communication Center.

To add feed deliveries

1. Open the Settings Manager.
2. Under Feed Bins, select a bin.
   The Settings Manager loads the information for selected bin.
3. Click **Enter Feed Ticket**.
   The Feed Delivery Reconciler appears.
4. Click **Add Entry**.
   The Feed Ticket Entry window appears.
5. Beside Delivery Date, enter the date and time *of the delivery*. You must enter it in the same format.
6. Beside Delivered Weight, enter the weight from the delivery ticket.
7. Click **OK** to save the delivery and return to the Feed Delivery Reconciler.
8. Click **Close** to return to the Settings Manager.
9. Click **Close** to return to the Communication Center.

To remove feed deliveries

1. Open the Settings Manager.
2. Under Feed Bins, select a bin.
   The Settings Manager loads the information for selected bin.
3. Click **Enter Feed Ticket**.
   The Feed Delivery Reconciler appears.
4. Under Feed Deliveries, select the delivery you want to remove.
5. Click **Edit Entry**.
   The Feed Ticket Entry window appears.
6. Beside Delivered Weight, change the value to 0.
7. Click **OK** to remove the delivery and return to the Feed Delivery Reconciler.
8. Click **Close** to return to the Settings Manager.
9. Click **Close** to return to the Communication Center.

BinBoss reports

BinBoss reports are in HTML, a file format commonly used on the Internet. You can view HTML reports using a web browser, print them, or e-mail them off-site for evaluation.

Report descriptions

BinBoss has five reports:

- Bin Summary Report (see page 39)
- Alarm Settings Report (see page 40)
- Alarm History Report (see page 41)
- Feed Delivery Report (see page 41)
- Feed Usage Report (see page 42)

Bin Summary Report

The Bin Summary Report lists the feed height, feed weight, headroom, and status for each feed bin. Any alarm conditions are highlighted: blue for reorder alarms and red for low feed alarms.

The list is sorted by most to least headroom. Headroom is the amount of feed, in pounds or kilograms, that can be delivered into the empty space of the feed bin.

Bin Summary Report
Phason Farms

Report Created: 08-Aug-2006 10:05
Units: feet, pounds

Information about the report

Feed Bin	Address	Feed Height	Feed Weight	Headroom	Status
N.Finisher1	02000003	11.98	19447	15802	Low alarm
N.Finisher2	02000001	12.08	19708	15541	Reorder Alarm
S.Finisher2	02000004	14.35	21781	13468	OK
S.Finisher1	02000007	14.58	22126	13123	OK

The feed height, feed weight, headroom, and status for each bin, sorted by available headroom

NOTE

You can configure BinBoss to automatically create and e-mail and/or fax reports. For more information, see **Scheduling automatic reports** on page 44.

Alarm Settings Report

The Alarm Settings Report lists bin height and alarm settings for each feed bin.

Alarm Settings Report
Phason Farms

Report Created: 08-Aug-2006
Height Units: feet

Information about the report

Feed Bin	Address	Bin Height	Reorder Height	Low Feed Height
N.Finisher1	02000003	20.00	12.50	6.50
N.Finisher2	02000001	20.00	12.50	6.50
S.Finisher1	02000004	20.00	12.50	6.50
S.Finisher2	02000007	20.00	12.50	6.50

The settings for each bin, sorted by bin description

Alarm History Report

The Alarm History Report is a list of all alarms for the selected date range, sorted by date and time.

Alarm History Report
Phason Farms

Date Range: 03-Aug-2006 to 08-Aug-2006
Report Created: 08-Aug-2006

Information about the report

08-Aug-2006

Time	Description
10:00	Feed reorder warning for Bin1
10:00	Feed reorder warning for Bin2
10:10	Feed reorder warning for Bin1
10:10	Low feed level alarm for Bin2

Total Alarms: 4

All alarms for the date range, sorted by date and time

Feed Delivery Report

The Feed Delivery Report lists the feed deliveries for the selected date range, sorted by bin and then by date. If a feed delivery has been reconciled, there is a 'Yes' in the Reconciled column. If the delivery has not been reconciled, there is a 'No' in the column.

For more information about reconciling feed deliveries, see **Reconciling feed deliveries** on page 36.

Feed Delivery Report
Phason Farms

Date Range: 05-Aug-2006 to 08-Aug-2006
Report Created: 08-Aug-2006
Weight Unit: pounds

Total Deliveries: 3
Total Fill Weight: 40349

Information about the report

N.Finisher1 — 02000003

Date and Time	Fill Weight	Reconciled?
05-Aug-2006 11:38	10000	Yes
08-Aug-2006 14:46	10349	No
Total Fills: 2	**20349**	

N.Finisher2— 02000001

Date and Time	Fill Weight	Reconciled?
08-Aug-2006 10:05	20000	Yes
Total Fills: 1	**20000**	

A list of deliveries for the selected date range, sorted by bin and then date/time

Feed Usage Report

The Feed Usage Report lists the daily feed usage, sorted by feed bin and then date. There is a total usage for each bin and a total for all bins.

BinBoss calculates feed usage by taking weight at the beginning of the day, adding any feed deliveries that occurred during the day, and then subtracting the weight at the end of the day.

For example

A bin weighs 5500 pounds at the beginning of the day and 7500 pounds at the end of the day. During the day there was a feed delivery of 3500 pounds. What is the feed usage for this day?

- beginning weight + feed deliveries – ending weight = feed usage
- 5500 + 3500 – 7500 = 1500 pounds

Feed Usage Report

Phason Farms

Date Range: 05-Aug-2006 to 08-Aug-2006
Weight Unit: pounds
Report Created: 09-Aug-2006

Total Feed Usage 80580

Information about the report

N.Finisher1 — 02000003

Date	Usage
05-Aug-2006	9452
06-Aug-2006	9814
07-Aug-2006	10326
08-Aug-2006	10998
Total	**40590**

N.Finisher2— 02000001

Date	Usage
05-Aug-2006	9318
06-Aug-2006	9712
07-Aug-2006	10186
08-Aug-2006	10774
Total	**39990**

A list of usage for the selected date range, sorted by bin and then date

Creating reports

The Reports Manager is where you create reports. Some reports require a date range. The table below lists the reports and their date requirements.

Name	Notes
Bin Summary Report	Current day only, no dates required
Alarm Settings Report	Current settings only, no dates required
Alarm History Report	Date range required
Feed Delivery Report	Date range required
Feed Usage Report	Date range required

BinBoss normally stores reports in the following directory:

```
C:\Documents and Settings\All Users\Application
Data\Phason\BinBoss\Reports
```

BinBoss was designed to measure *daily* feed usage. If you try to evaluate feed usage for durations that are less than one day, the results will not be accurate.

To create reports

1. Open the Reports Manager.
2. If required, select a date range. For more information, see **Selecting date ranges** below.
3. Click the button for the type of report you want to create.
   Your report displays.
4. Click **Close** to return to the Communication Center.

Selecting date ranges

Date ranges are required for the Feed Usage Report, Feed Delivery Report, and Alarm History Report.

A date range consists of a start date and an end date. The start date cannot be after the end date and the end date cannot be after the current day.

To select date ranges

1. Beside Start Date, click .

The calendar appears.

2. Select a start date:

To move forward and backward through the months, click ▶ or ◀.

To select a specific month, click the month on the calendar and then select the month you want to go to.

To move forward and backward through the years, click the year on the calendar and then click ▲ or ▼.

3. If required, repeat steps 1 and 2 for the end date.

Scheduling automatic reports

When you have automatic reports enabled, at each scheduled time, BinBoss creates a Bin Summary Report and then faxes and/or e-mails it to the locations you enter. You can schedule BinBoss to create and send automatic reports daily, weekly, or monthly, at any time of the day.

Before BinBoss can send e-mail reports, you must configure the BinBoss e-mail client. For more information, see **Configuring the BinBoss e-mail and fax client** on page 28.

If enable both e-mailing and faxing, BinBoss sends out all e-mails first and then sends the faxes.

To schedule automatic reports

1. Open the Reports Manager.
2. Click **Configure Automatic Report**.
   The Automatic Reports window appears.

To enable faxed reports:

- Select Enable Fax.
- Beside Numbers, enter the fax numbers you want to fax. To fax multiple locations, enter each number on a separate line.

To enable e-mailed reports:

- Select Enable E-mail.
- Beside Addresses, enter the addresses you want to e-mail. To e-mail multiple people, separate each address with a semi-colon (;).

3. Under Recurrence, select how often you want to send the reports.
4. Select when you want the next report sent.
5. Click **Close** to return to the Reports Manager.
6. Click **Close** to return to the Communication Center.

If BinBoss displays an error message while sending an e-mail or fax, look up the message in the **Troubleshooting** table on page 49.

Do not pick up the phone while BinBoss is sending a fax.

Interpreting data

Occasionally there can be irregularities in the information BinBoss displays. **Appendix A: Troubleshooting** on page 49 explains many issues you might encounter.

If you see an irregularity in a report, try to determine what might have caused it. BinBoss collects and displays feed usage data, it's up to you to add intelligence to the data and use it to your advantage. Below are two examples.

Example 1—in a Feed Usage Report, a day shows negative feed consumption, followed by an unusually large consumption the next day.

In this case, a feed delivery was manually entered on the wrong day and/or time. You can correct the problem by reviewing the information in the Communication Center and determining when the feed level in the bin actually increased. When you know the date and time the delivery actually occurred, edit the feed delivery and enter the correct information. For more information, see **Reconciling feed deliveries** on page 36.

Example 2—in a Feed Usage Report, there is the exact same feed usage on two or more days.

In this case, there was a communication loss spanning the days. During that time, BinBoss could not retrieve feed level information from the sensors. When communication resumed, BinBoss calculated the usage and spread it evenly across the affected period.

Understanding data accuracy

There are two main things that affect the accuracy of the data: the feed bin dimensions and the amount of data collected.

Feed bin dimensions

Feed bin dimensions affect the accuracy of most the information BinBoss displays. BinBoss uses these dimensions to calculate the amount of feed in a feed bin. If the dimensions are in the wrong unit of measure or are not correct, the data displayed will not be correct. For more information, see **Measuring feed bins** on page 16.

Amount of data collected

BinBoss needs to collect data to calculate feed levels and other information. If the computer is not on and BinBoss is not running, or the Feed Level Sensor is not communicating with the computer, BinBoss cannot collect accurate data.

BinBoss was designed to measure *daily* feed usage. If you try to evaluate feed usage for durations that are less than one day, the results will not be accurate.

Appendices

- Appendix A: Troubleshooting
- Appendix B: Hints and tips
- Appendix C: Worksheets

Appendix A: Troubleshooting

- If you are having problems using BinBoss, look up the problem in the table below and then follow the instructions to resolve the problem.
- If you have a problem that is not listed here, try to determine what might be causing the problem.
- If you cannot resolve the problem, call your dealer or Phason's Customer Support (see **Service and technical support** at the front of the manual).

Problem	Possible cause	Possible resolution
"Communication Lost" in BinBoss Status Viewer or the feed level displays as '--' in a chart or report	BinBoss is not receiving data from the Feed Level Sensor.	◇ Make sure the sensor is properly wired, including the communication wiring. For more information, see Error! Reference source not found. **Error! Bookmark not defined.**. ◇ Make sure the sensor is not damaged. Gently remove any dust or dirt from the sensor face using a soft brush. ◇ For more information, see the **FLS installation guide**.
Negative feed consumption on a feed delivery date and/or extremely large consumption	Feed delivery manually entered on the wrong day	◇ Make sure feed deliveries that were entered manually are entered on the correct day. For more information, see **Reconciling feed deliveries** on page 36.
Zero feed consumption or "0" for consumption on Feed Usage Report	No animals in the barn during the selected date range.	◇ Verify the date range you want and then create the report.
	Feed bin is empty	◇ Fill the feed bin.
	Feed auger not working	◇ Make sure the feed auger wiring is correct and in good condition.
	Feed bridging or rat-holing	◇ Loosen the feed in the bin..
Bin Lid left open message in Communication Center, Feed Monitor, or alarm log	The lid on the indicated bin has been left open for any extended period of time.	◇ Make sure the lid is completely closed.
The Feed Level Sensor did not detect a feed fill	The feed was delivered to the wrong bin.	◇ Verify the feed was delivered to the correct bin. If BinBoss failed to detect the delivery, add the delivery. For more information, see **Reconciling feed deliveries** on page 36.
Low Feed Alarm message in the Communication Center and Bin Level Viewer	The level of feed detected in the feed bin is below the Alarm level.	◇ Order feed.
Inaccurate feed level measurements or data missing on the viewer, chart, or report.	Incorrect feed bin dimensions	◇ Make sure the feed bin dimensions are correct. For more information, see **Adding, editing, and removing feed bins** on page 24.

Problem	Possible cause	Possible resolution
	Not enough data	◇ Let BinBoss collect more data before creating the chart or report. For more information, see **Understanding data accuracy** on page 46. ◇ Check the sensor face to make sure it is not blocked with dust.
	Feed delivery manually entered on the wrong day	◇ Make sure feed deliveries that were entered manually are entered on the correct day. For more information, see **Reconciling feed deliveries** on page 36.
"*Fax enabled but no device selected, please configure fax device. Fax not sent.*" message in the Communication Center	Automatic fax reports are enabled, but there is no fax device selected.	◇ If you want to send automatic fax reports, configure the fax client properly. For more information, see **Configuring the BinBoss e-mail and fax clients** on page 28. ◇ If you do not want to send automatic fax reports, deselect the option. For more information, see **Scheduling automatic reports** on page 44.
"*Company name blank. Fax not sent.*" message in the Communication Center.	The company name is blank.	◇ Enter the company name. For more information, see **Configuring site identification** on page 21.
"*Your Fax number is not configured. Fax not sent.*" message in the Communication Center.	The outgoing fax number is blank.	◇ Configure the fax client properly. For more information, see **Configuring the BinBoss e-mail and fax clients** on page 28.
"*Invalid email address.*" message in the Communication Center.	The outgoing e-mail address is invalid or not formatted properly.	◇ Configure the e-mail client properly. For more information, see **Configuring the BinBoss e-mail and fax clients** on page 28.

Appendix B: Hints and tips

- When measuring the feed bins, measure them as accurately as possible. Inaccurate measurements affect feed volume calculations.
- BinBoss was designed to measure daily feed usage. If you try to evaluate feed usage for durations that are less than one day, the results will not be as accurate.
- Make sure to use the Feed Delivery Reconciler after each feed delivery. Reconciling feed deliveries allows you to correct differences between the amount of feed measured by the Feed Level Sensors and the amount of feed delivered according to the feed delivery ticket. Reconciling your feed inventory on a regular basis helps ensure the accuracy of all your feed level information.
- Do not let the feed level in the bins get too low before ordering feed. We recommend there be at least three feet of feed in the bottom cone section.
- Do not overfill the bin. The Feed Level Sensor cannot measure feed that is within one foot of the sensor. If the bin is too full, feed can get into the sensor face and prevent the sensor from operating.
- Make sure your feed delivery drivers know the Feed Level Sensor is mounted on the bin lid and that they should be careful when filling the bins.
- When your delivery drivers fill the feed bins, make sure they open the lids all the way. This allows the Feed Level Sensor to properly detect the fill and provide accurate fill measurements.
- Make sure the bin lid is closed after each feed delivery. The Feed Level Sensor cannot measure the feed level if the bin lid is open. When the bin lid is open for long periods, rain can get into the sensor face and damage the components and the feed. BinBoss displays a message in the Communication Center when it detects an open bin lid.
- If your feed delivery truck is using a pneumatic feed delivery system, use a cyclone to reduce the dust levels while the bin is being filled. Dust can block the sensor face and prevent the sensor from accurately detecting feed.
- Inspect the sensor face every three months. Use a soft brush to gently remove any feed or dust from the screen. **Do not use sharp tools, wire brushes, or compressed air to clean the sensor face. These will damage the sensor and void the warranty.**

Appendix C: Worksheets

This appendix contains worksheets to help you set up BinBoss.

- Bin dimensions worksheet
- Feed level alarms worksheet

Bin dimensions worksheet

Enter the feed bin dimensions in the worksheet on the next page. For more information about measuring feed bins, see **Measuring feed bins** on page 16.

Use the information in the worksheet when you configure the feed bins in BinBoss. When you enter the dimensions in the software, you need to enter them as either feet or metres (depending on what you have selected in the Options tab of the Configuration Manager). If your measurements contain inches or centimetres (for example one foot, six inches), you will need to convert them to feet or metres.

For example, if your measurement for top cone diameter is 1 foot 9 inches, then you would enter 1.75 in the Feed Bin Configuration window (9 ÷ 12=1.75). The chart below shows some common conversions for inches to feet and centimetres to metres.

Inches	Feet
1	0.08
2	0.17
3	0.25
4	0.33
5	0.42
6	0.50
7	0.58
8	0.67
9	0.75
10	0.83
11	0.92
12	1.00

Centimetres	Metres
10	0.10
20	0.20
30	0.30
40	0.40
50	0.50
60	0.60
70	0.70
80	0.80
90	0.90
100	1.00

Make sure you measure and enter the dimensions in the same unit of measure that you have selected for BinBoss.

The first line is an example of how to fill in the worksheet.

Bin description	FLS Address	Bin dimensions①					
		Sensor offset	Top cone diameter	Top cone height	Cylinder height	Cylinder diameter	Bottom cone height
N. Finisher1	*12345678*	*0*	*1.67*	*2.19*	*8.33*	*9.00*	*4.00*
① Dimensions in feet or metres							

Bin description	FLS Address	Bin dimensions①					
		Sensor offset	Top cone diameter	Top cone height	Cylinder height	Cylinder diameter	Bottom cone height

① Dimensions in feet or metres

Feed level alarms worksheet

Use the Feed level alarms worksheet to help you configure the feed level alarms. The first line is an example of how to fill in the worksheet.

- The feed reorder level is the feed level (in feet or metres from the bottom of the bin) that will provide enough time for the feed company to deliver more feed before the bin is empty.
- The low feed alarm level is the feed level (in feet or metres from the bottom of the bin) at which there is a danger of running out of feed and you need to fill the bin immediately.

For more information about configuring feed level alarms and warnings, see **Setting up alarms** on page 29.

Feed bin	Address	Reorder level①	Alarm level①
N. Finisher1	*123456*	*10.00*	*5.00*
① Levels in feet or metres			

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